

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of

Jürgen SCHULZ-HARDER

Group Art Unit: 1772

Serial No: 09/589,149

Examiner: J.J. Rhee

Filed : June 8, 2000

For : CERAMIC/METAL SUBSTRATE,
ESPECIALLY COMPOSITE SUBSTRATE

RESPONSE AFTER FINAL REJECTION

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In the Final Rejection mailed February 6, 2003, the Examiner rejected claims 30-54 as being obvious over Schulz-Harder in view of Von Vajna (U.S. Patent 5,773,764). Reconsideration of this rejection is respectfully requested.

Schulz-Harder discloses a ceramic-metal substrate comprising a ceramic-layer forming at least two substrate areas connected to each other and adjoined to one another at least one break line formed by a groove provided for in a ceramic layer. Schulz-Harder does not disclose at least one metal surface of each substrate area having an edge reduction on the region neighboring the predetermined break line and distanced from the groove with the edge reduction having a specific design as recited in the last subparagraph of claim 53 and the last two subparagraphs of claim 54. The Examiner relies upon the disclosure of Von Vajna to disclose such an edge reduction. This rejection is respectfully traversed.

In the invention, edges of the metalization the edge reduction is distanced from the predetermined break line, the break line is formed by the groove as disclosed in the second paragraph of page 9. Therefore, the edges of the edge reduction are distanced from this groove, overcoming a specific a problem occurring with ceramic-metal substrates not present in multi-layer printed circuit boards made of plastic material as

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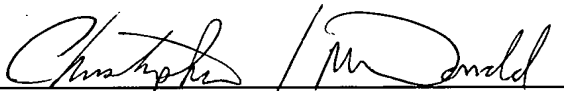
disclosed by Von Vajna. Uncontrolled breaks in the ceramic layer caused by internal stresses resulting from the heat bonding process can be avoided by the end reduction. These cracks can be avoided by end reduction.

Von Vajna discloses grooves 105, 215 in a multi-layer substrate. The grooves extend through metalizations 213, 217, 225, 231. The import of this is that the edges of these metalizations are not a distance from the adjacent groove 105, 215. Even assuming the incline edges of the metalizations formed by the v-shaped groove 102, 215 are considered edges with an edge reduction, Von Vajna still fails to disclose edges with edge reductions a distance from the adjacent groove formed by the adjacent break line.

It is respectfully requested that the rejection based on obviousness be withdrawn and the claims allowed.

A one month extension of time accompanies this response. If any additional fees are due and owing, the Commissioner is authorized to charge Deposit Account 08-2455.

Respectfully submitted,


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June 5, 2003

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Attorney's Docket: A-7052.RAFR/eb